



This blue goose, designed by J.N. "Ding" Darling, has become the symbol of the National Wildlife Refuge System.

The *U.S. Fish and Wildlife Service* is the principal Federal agency responsible for conserving, protecting, and enhancing fish, wildlife, plants, and their habitats for the continuing benefit of the American people. The Service manages the 150-million acre National Wildlife Refuge System comprised of more than 550 national wildlife refuges and thousands of waterfowl production areas. It also operates 69 national fish hatcheries and 81 ecological services field stations. The agency enforces Federal wildlife laws, manages migratory bird populations, restores nationally significant fisheries, conserves and restores wildlife habitat such as wetlands, administers the Endangered Species Act, and helps foreign governments with their conservation efforts. It also oversees the Federal Assistance Program which distributes hundreds of millions of dollars in excise taxes on fishing and hunting equipment to state wildlife agencies.

Comprehensive Conservation Plans provide long term guidance for management decisions and set forth goals, objectives, and strategies needed to accomplish refuge purposes and identify the Service's best estimate of future needs. These plans detail program planning levels that are sometimes substantially above current budget allocations and, as such, are primarily for Service strategic planning and program prioritization purposes. The plans do not constitute a commitment for staffing increases, operational and maintenance increases, or funding for future land acquisition.



### U.S. Fish & Wildlife Service

# Elizabeth Hartwell Mason Neck and Featherstone National Wildlife Refuges

Draft Comprehensive Conservation Plan and the Environmental Assessment

December 2010

Potomac River National Wildlife Refuge Complex Vision Statement

The Potomac River National Wildlife Refuge Complex provides exceptional forest, grassland, and wetland habitats for wildlife in a dynamic, highly urbanized region of Northern Virginia. We will maintain and enhance those quality habitats along the middle tidal Potomac River for native wildlife, particularly bald eagles and other species of conservation concern.

The proximity of the Refuge Complex to our Nation's capital provides unparalleled opportunities to demonstrate the importance of the natural world in enhancing the quality of human life, and to raising public awareness about the value of the National Wildlife Refuge System. Through outreach, education, and partnerships, we will foster stewardship of the living resources of the Potomac River and relate their significance to the greater Chesapeake Bay watershed. Visitors will have diverse opportunities for quality, compatible, wildlife-dependent recreation.

Elizabeth Hartwell Mason Neck Refuge Vision Statement

Elizabeth Hartwell Mason Neck National Wildlife Refuge is dedicated to the protection of the bald eagle and exemplifies the significant efforts, contributions and successes of conservationists. The refuge will continue to protect and enhance regionally important habitat for the bald eagle, migratory birds, and native wildlife and plant species. We will provide quality wildlife-dependent recreational and educational opportunities, in particular wildlife viewing and photography. In cooperation with the other public agencies on the Mason Neck Peninsula, we will work to resolve resource issues in the area.

Featherstone Refuge Vision Statement

Featherstone National Wildlife Refuge provides valuable acres of 'wild woods and wetland' which are rapidly disappearing within this region of Northern Virginia. The refuge will continue to protect wetlands, bottomland hardwoods, and associated native wildlife and plants in an otherwise highly urbanized setting. Assuming access issues are resolved, the refuge will provide quality wildlife-dependent recreational opportunities, in particular wildlife viewing, photography, and fishing.

Vision Statements i



### U.S. Fish & Wildlife Service

# Elizabeth Hartwell Mason Neck and Featherstone National Wildlife Refuges

Draft Comprehensive Conservation Plan and the Environmental Assessment

December 2010

### **Summary**

**Type of Action:** Administrative – Development of a Comprehensive Conservation Plan

**Lead Agency:** U.S. Department of the Interior, Fish and Wildlife Service

Location: Elizabeth Hartwell Mason Neck National Wildlife Refuge—

Fairfax County, Virginia

Featherstone National Wildlife Refuge—

Prince William County, Virginia

**Administrative** Potomac River National Wildlife Refuge Complex

**Headquarters:** 14344 Jefferson Davis Highway

Woodbridge, VA 22191

**Responsible Official:** Marvin Moriarty, Regional Director, Region 5, Northeast

**For Further Information:** Nancy McGarigal, Natural Resource Planner

Northeast Regional Office 300 Westgate Center Drive

Hadley, MA 01035 (413) 253-8562

northeastplanning@fws.gov

This Draft Comprehensive Conservation Plan (CCP) and the accompanying Environmental Assessment (EA) analyzes three alternatives for managing Elizabeth Hartwell Mason Neck Refuge and two alternatives for managing Featherstone Refuge over the next 15 years. This document also contains six appendixes that provide additional information supporting our analysis.

Following is a brief overview of each alternative.

Summary

#### Elizabeth Hartwell Mason Neck National Wildlife Refuge

Alternative A (Current Management): Alternative A satisfies the National Environmental Policy Act (NEPA) requirement of a "no action" alternative, which we define as "continuing current management." It describes our existing management priorities and activities, and serves as a baseline for comparing and contrasting alternatives B and C.

Alternative B (Improved Management for Federal Trust Resources): Alternative B is the Service-preferred alternative. It combines the actions we believe would best achieve that refuge's purposes, vision and goals, and respond to public issues. It would enhance our management of refuge habitats to support Federal trust resources and species of conservation concern. In particular, our priority would be to protect the refuge's upland forests to benefit bald eagles, great blue heron, and other forest-dependent migratory birds and to protect the refuge's marsh habitat to benefit eagles, waterfowl, waterbirds, and interjurisdictional fish. Our Mason Neck Refuge visitor service's program would enhance compatible wildlife-dependent activities, with emphasis on wildlife observation and photography. We would improve our current trails and add new trails, observation platforms, and photography blinds. We would also offer a new youth turkey hunt, and expand our interpretive programs and outreach efforts to inform and involve more people in working towards refuge goals.

Alternative C (Enhanced Public Use Management): Alternative C would manage habitat similar to alternative A, but would expand wildlife-dependent public use programs beyond that which is proposed under either alternatives A or B. We would devote more staff time and resources to improving each of the six priority public uses. For example, we would provide additional opportunities by offering a muzzleloader deer hunting season, constructing photography blinds, and offering more guided and self-guided wildlife observation tours and environmental education programs.

#### Featherstone National Wildlife Refuge

<u>Alternative A (Current Management)</u>: Alternative A satisfies the NEPA requirement of a "no action" alternative, which we define as "continuing current management." It describes our existing management priorities and activities, and serves as a baseline for comparing and contrasting alternative B.

Alternative B (Enhanced Management): Alternative B is the Service-preferred alternative. Under alternative B, the Service would build off the wildlife and habitat actions in alternative A. Increased emphasis would be on monitoring and protecting sensitive areas from human disturbance and monitoring and controlling invasive plants, pests, and pathogens to avoid catastrophic loss or degradation of habitat. Under alternative B, the Service would continue to pursue and evaluate options with Prince William County and other stakeholders to secure public parking, and safe and legal public access to the refuge, including segment of the Potomac Heritage National Scenic Trail. Once public access is secured, and we have additional staff to effectively manage a visitor program, we would provide opportunities for wildlife observation and nature photography on designated refuge trails, and fishing at designated sites. Within 5 years we would also evaluate in detail a proposal to provide hunting opportunities on the refuge.

Chapters	Potomac River National Wildlife Refuge Complex Vision Statement
	Elizabeth Hartwell Mason Neck Refuge Vision Statement.
	Featherstone Refuge Vision Statement
	Summary
	, , , , , , , , , , , , , , , , , , ,
Chapter 1	The Purpose of and Need for Action
	Introduction
	Document Organization
	The Purpose of and Need for the Proposed Action
	Regional Context and Project Analysis Area
	The Service and Refuge System Policies and Mandates Guiding Planning 1-12
	Conservation Plans and Initiatives Guiding the Project
	Refuge Management Profiles
	Vision Statements
	Refuge Goals
	The Comprehensive Conservation Planning Process
	Issues, Concerns, and Opportunities
Chapter 2	Affected Environment
-	Introduction
	Regional Setting
	Socioeconomic Setting
	Special Regional Conservation Areas and Activities
	Potomac River Refuge Complex Administration
	Mason Neck Refuge Environment
	Featherstone Refuge Environment
Chapter 3	Alternatives, Including the Service-preferred Alternative
•	Introduction
	Formulating Alternatives that Relate Goals, Objectives, and Strategies
	Developing Refuge CCP Alternatives, including the "No Action" Alternative 3-1
	Part One—Mason Neck Refuge CCP Alternatives
	Actions Common to All Mason Neck Refuge CCP Alternatives
	Actions Common to Alternative B and C Only
	Actions Considered, but not Fully Developed
	Conducting Additional NEPA Analysis
	Mason Neck Refuge Alternative A—Current Management
	Introduction
	Objectives and Strategies to Meet Refuge Goals
	Mason Neck Refuge Alternative B–Improved Management for Federal Trust Resources
	(Service-preferred Alternative)
	Introduction
	Objectives and Strategies to Meet Refuge Goals
	Mason Neck Refuge Alternative C—Enhanced Public Use Management
	Introduction
	Objectives and Strategies to Meet Refuge Goals
	Mason Neck Refuge—CCP Alternatives Comparison Table

Table of Contents v

## **Chapters (cont.)**

Chapters 3	Alternatives, Including the Service-preferred Alternative (cont.)	
	Part Two — Featherstone Refuge CCP Alternatives	
	Actions Common to Both Featherstone Refuge CCP Alternatives	
	Conducting Additional NEPA Analysis	
	Featherstone Refuge Alternative A—Current Management	
	Featherstone Refuge Alternative B—Enhanced Management (Service-preferred Alternative)	
	Objectives and Strategies to Meet Refuge Goals.	
	Featherstone Refuge — CCP Alternatives Comparison Table	3-102
Chapter 4	Environmental Consequences	
	Introduction	. 4-1
	Part 1— Environmental Consequences of Mason Neck Refuge CCP Alternatives	
	Impacts in the Refuge Vicinity	. 4-4
	Air Quality Impacts	. 4-4
	Water Quality, Wetlands, and Aquatic Biota Impacts	. 4-7
	Socioeconomic Impacts	4-14
	Refuge-Specific Impacts	4-18
	Soil Impacts	4-18
	Forest Habitat Impacts	4-23
	Shoreline Impacts	4-26
	Freshwater Marsh Impacts	4-28
	Impacts to Birds	4-30
	Impacts to Other Native Wildlife	4-41
	Archaeological and Historic Resources Impacts	4-47
	Impacts on or Between Refuge Users	4-48
	Cumulative Impacts	4-53
	Relationship Between Short-term Uses of the Human Environment and Enhancement of Long-term Productivity	4-57
	Unavoidable Adverse Impacts	
	Potential Irreversible and Irretrievable Commitments of Resources	
	Environmental Justice	4-58
	Summary of the Impacts of the Alternatives	
	Part 2—Environmental Consequences of Featherstone Refuge CCP Alternatives	
	Impacts in the Refuge Vicinity	4-76
	Air Quality Impacts	4-76
	Water Quality, Wetlands, and Aquatic Biota Impacts	4-78
	Socioeconomic Impacts	4-83
	Refuge-Specific Impacts	4-85
	Soil Impacts	4-85
	Forest Habitat Impacts	4-89
	Wetland Impacts	
	Impacts to Birds	
	Impacts to Other Native Wildlife	
	Archaeological and Historic Resources Impacts	
	Impacts On or Between Refuge Users	

# **Chapters (cont.)**

Chapters 4	<b>Environmental C</b>	onsequence	s (cont.)	
		Cumulative	Impacts	03
		Relationship Enhance	o Between Short-term Uses of the Human Environment and ment of Long-term Productivity	06
			e Adverse Impacts	
		Potential Irr	reversible and Irretrievable Commitments of Resources	07
		Environmen	tal Justice	07
	Summary of	the Impacts	of the Alternatives	80
Chapter 5	Consultation and	Coordination	1	
		Introduction	1	j-1
		Planning to	Protect Refuge Resources	j-1
		Partners Inv	volved in Refuge Planning	j-5
		Contact Info	ormation	i-6
Chapter 6	List of Preparers			
		Writers and	Major Contributors	i-1
Bibliograph	ıv			
3 7	,	Chapter 1 R	eferencesBibl	l-1
		•	eferences	
		•	eferencesBibl	
		•	eferencesBibli	
Glossary (iı	ncluding list of acr	onyms and a	bbreviations)	
•	Ü	-	Glos	չ-1
		•	and Abbreviations	
		,		
List of Fig	ures			
	<b>,</b>	Figure 1.1	The Comprehensive Conservation Planning Process	33
		Figure E.1	Current Staffing for Potomac River Complex (Mason Neck, Featherstone and Occoquan Bay refuges): Alternative A E.	-1
		Figure E.2	Proposed Staffing for Potomac River Complex (Mason Neck, Featherstone and Occoquan Bay refuges): Alternatives B and C E	-2
List of Ta	bles			
		Table 2.1	Air Quality Index (AQI) Values and Related Health Concerns 2	-3
		Table 2.2	Air Quality Index Statistics for Prince William and Fairfax Counties for 2007	-3
		Table 2.3	Virginia 2006 303(d) Impaired Waters (Category 5) Needing TMDL Study	-4
		Table 2.4	Maryland 2008 303(d) Impaired Waters (Category 5) Needing TMDL Study	-5
		Table 2.5	Regional Population Forecasts. 2	
		Table 2.6	Regional Environmental Justice summary characteristics 2	
		Table 2.7	Regional Environmental Justice detailed characteristics 2	
		Table 2.8	Waterfowl species using the Potomac River Focus Area	
		Table 2.9	Potomac River Refuge Complex Annual Budget from 2002-2009 2-1	16

Table of Contents vii

## List of Tables (cont.)

<b>Table 2.10</b>	Revenue-sharing Payments to Fairfax County, Virginia from 2003-2009
Table 2.11	Characteristics of the Soils of Mason Neck Refuge
Table 2.12	Annual Mason Neck Refuge Deer Harvest Results (1998-2009) 2-41
Table 2.13	Revenue-sharing Payments for Featherstone Refuge to Prince William County, Virginia from 2003-2009
Table 2.14	Characteristics of the Soils of Featherstone Refuge2-47
Table 2.15	Featherstone Refuge Wetland Types
Table 3.1	Comparison of objectives and strategies for Elizabeth Hartwell Mason Neck NWR alternatives
Table 3.2	Comparison of objectives and strategies for Featherstone NWR alternatives
Table 4.1	Estimate annual visitor days and predicted increases by alternative based on recent visitation reported during years 2005-2008 4-5
Table 4.2	Summary impact comparison of Mason Neck Refuge CCP Alternatives
Table 4.3	Summary impact comparison of Featherstone Refuge CCP Alternatives
Table A.1	Mason Neck Refuge Birds of Conservation Concern
Table A.2	Known or Suspected Reptiles and Amphibians of Mason Neck Refuge A-6
Table A.3	Known or Suspected Mammals of Mason Neck Refuge A-8
Table A.4	Fish Species of Conservation Concern in Mason Neck Refuge area A-9
Table A.5	Plants Found at Mason Neck Refuge
Table A.6	Featherstone Refuge Birds of Conservation Concern
Table A.7	Known or Suspected Reptiles and Amphibian on Featherstone Refuge
Table A.8	Known or Suspected Mammals on Featherstone Refuge A-22
Table A.9	Fish Species of Conservation Concern in Featherstone Refuge area . A-24
Table A.10	Plant Species of Conservation Concern for Featherstone Refuge area A-25
Table C.1	Projects currently in, or planned for, the Refuge Operations Needs System database for Mason Neck and Featherstone NWRs C-1
Table C.2	Projects currently in, or planned for, the Service Asset Maintenance Management System (SAMMS) database for Mason Neck and Featherstone NWRs
<b>M</b> ap 1.1	Potomac River National Wildlife Refuge Complex
Map 1.2	Mason Neck National Wildlife Refuge Boundary and Features 1-3
Map 1.3	Featherstone National Wildlife Refuge Boundary and Features 1-4
Мар 1.4	Potomac River Refuge Complex and its Regional Context 1-9
Map 1.5	Mason Neck and Featherstone Refuges Project Analysis Area 1-10
Map 1.6	Mason Neck and Featherstone Refuges Socioeconomic Context 1-11
Map 2.1	Regional Parks and Protected Lands of the Upper Tidal Potomac River Area
Map 2.2	Bald Eagle Nesting Sites and Concentration Areas
Map 2.3	Mason Neck Refuge Ownership Status
Map 2.4	Mason Neck Refuge Topography 2-25

**List of Maps** 

	Man 25	Massa Nask Defense Consuel Land Consu	0.00
	Map 2.5	Mason Neck Refuge General Land Cover	
	Map 2.6	Mason Neck Refuge Soils.	
	Map 2.7	Mason Neck Refuge National Wetlands Inventory	. 2-31
	<b>M</b> ap 2.8	Potomac Heritage National Scenic Trail proposed generalized corridor.	
	Map 2.9	Featherstone Refuge Topography	. 2-45
	Map 2.10	Featherstone Refuge General Land Cover	. 2-46
	Map 2.11	Featherstone Refuge Soils	
	Map 2.12	Featherstone Refuge National Wetlands Inventory	. 2-50
	Map 3.1	Existing and Proposed Public Use Features at Mason Neck Refuge	. 3-49
	Map 3.2	Proposed Woodmarsh Trail improvement at Mason Neck Refuge	. 3-51
	Map 3.3	Proposed Public Use Features at Featherstone Refuge	. 3-91
	Map D.1	Existing and Proposed Public Use Features at Mason Neck National Wildlife Refuge	. D-6
	Map D.2	Ownership Status of Mason Neck National Wildlife Refuge	
	Map D.3	Proposed Public Use Features at Featherstone National Wildlife Refuge	
Annondiss		Wallonal Wilams Horago	
Appendix	25		
Appendix A	Species of Conservation Co Featherstone National Wild	ncern at Elizabeth Hartwell Mason Neck and life Refuges	
	Species of	Conservation Concern at Elizabeth Hartwell Mason Neck and	
	<sup>'</sup> Feathers	tone National Wildlife Refuges	A-1
Appendix B	Findings of Appropriatenes	s and Compatibility Determinations	
	Introductio	n	B-1
	Finding of A	Appropriateness—Berry picking/Mushroom Harvesting/ Picking/Medicinal Harvesting	
		Appropriateness—Biking off of designated routes	
	_	Appropriateness—Geocaching	
	•	Appropriateness—Horseback Riding	
	_	Appropriateness—Non-wildlife Dependent Group Gatherings	
	•	Appropriateness—Organized or Facility-supported Picnicking	
	•	, , , ,	
		Appropriateness—Swimming and Sunbathing on Refuge Shore	
	•	Appropriateness—Dog Walking	
	•	ity Determination—Dog walking	
		Appropriateness—Outdoor Events	
	•	ity Determination—Outdoor Events	
	Finding of A	<b>Appropriateness</b> —Research (including inventories and monitoring)	. B-39
	Compatibil	${f ity}$ ${f Determination}$ —Research (including inventories and monitoring)	. B-41
	Finding of A Designa	Appropriateness—Non-motorized Modes of Access on ted Trails	. B-47
	Compatibil	ity Determination—Non-motorized Modes of Access on	
	Designa	ted Trails	. B-49
		ity Determination—Wildlife Observation, Photography, Environmental on, and Interpretation	. B-59
	Compatibil	ity Determination—Hunting	. B-69
		ity Determination—Fishing	

Table of Contents ix

## **Appendixes (cont.)**

Appendix C	Refuge Operatio	ns Needs (RONS) and Service Asset Maintenance Management Systems (SAMMS	<b>s</b> )
		Refuge Operation Needs & Service Asset Maintenance Management Systems	C-1
Appendix D	Wilderness Revi	ew	
		Introduction	D-1
		Wilderness Inventory	D-1
		Summary of Wilderness Inventory Findings	D-5
Appendix E	Staffing Charts		
		Refuge Staffing Charts for Alternatives	E-1
Appendix F	Archaeological a	and Historical Resources Overview	
		Archaeological and Historical Resources Overview: Elizabeth Hartwell Mason Neck National Wildlife Refuge	. F-1
		Archaeological and Historical Resources Overview: Featherstone National Wildlife Refuge	. F-9